TNT885 Cationic Surfactants

DOC312.53.94415

0.2–2.0 mg/L Cetyltrimethylammonium bromide TNTplus 885—Method 10305

Scope and application: Preliminary analysis of surface water, waste water and process control.

Test preparation

Test storage

Storage temperature: 15–25 °C (59–77 °F)

pH/Temperature

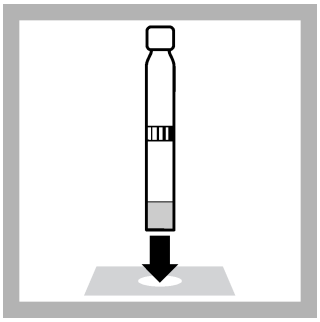
The pH of the water sample must be between pH 4–9.

The temperature of the water sample and reagents must be 22 °C (72 °F).

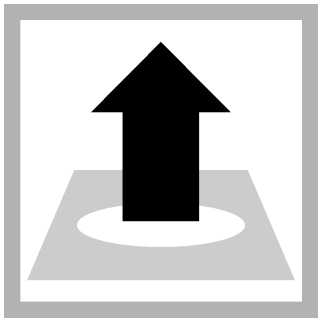
Before starting

Note:
If ambient temperature decreases, light turbidity can form in the chloroform phase. Increase the vial temperature briefly (for example, hold the vial in hands) to remove turbidity.
Make sure to work at the recommended temperature to get correct results.
The procedure is applicable for DR1900, DR3900, DR4900 and DR6000 only.
Review safety information and expiration date on the package.
Review the Safety Data Sheets (MSDS/SDS) for the chemicals that are used. Use the recommended personal protective equipment.
Dispose of reacted solutions according to local, state and federal regulations. Refer to the Safety Data Sheets for disposal information for unused reagents. Refer to the environmental, health and safety staff for your facility and/or local regulatory agencies for further disposal information.

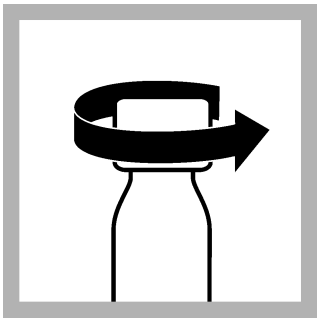
Procedure



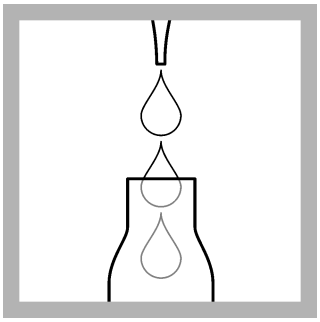
1. Insert the sample vial as blank-value vial in the photometer, before adding the water sample and reagents. DR1900: Go to LCK/TNTplus methods. Select the test. Push **READ 1**.



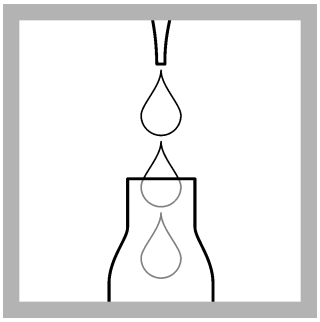
2. Remove the vial.



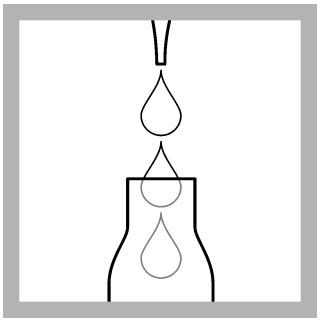
3. Open the vial.



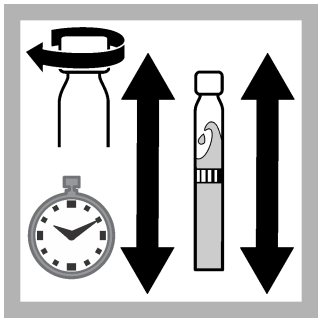
4. Carefully pipet **4.0 mL** of **sample**.



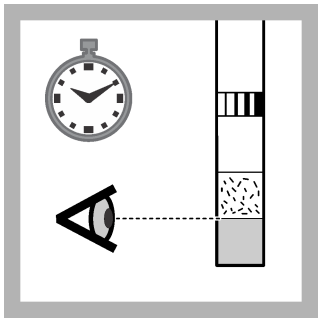
5. Carefully pipet **0.4 mL** of **solution A.**.



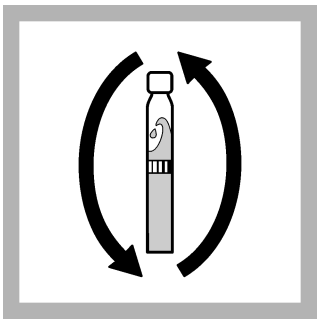
6. Carefully pipet **0.2 mL** of **solution B.**.



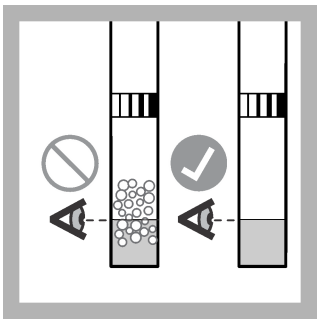
7. Close the vial. Hold the vial between the screw cap and the base, shake it for **2 minutes** not too vigorously.



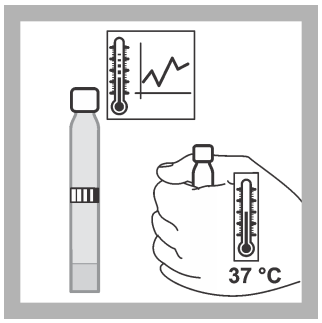
8. Leave the vial standing upright for **30 seconds** to allow phase separation to occur.



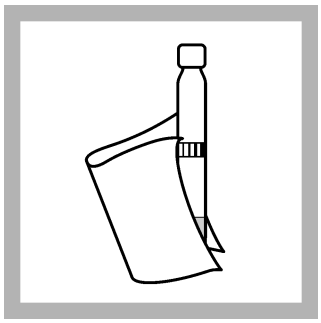
9. Carefully invert the vial **twice**.



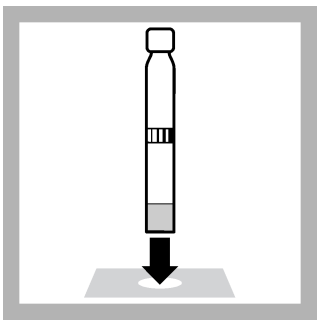
10. If streaks or small drops of water have formed in the lower part of the vial, they can be eliminated by carefully tilting the vial through 90 degrees while simultaneously rotating it.



11. Depending on the ambient temperature, slight turbidity may appear in the chloroform phase over the course of time.
This can be eliminated by warming the vial briefly (for example, by holding it in the hand).



12. Thoroughly clean the outside of the vial and evaluate.



13. Insert the vial into the cell holder.
DR 1900: Push **READ 2**.

Interferences

The ions listed in the table have been individually checked against the given concentrations and do not cause interference. The cumulative effects and the influence of other ions have not been determined.

Anionic surfactants cause low-bias results.

The measurement results must be subjected to plausibility checks (dilute and/or spike the sample).

Interference level	Interfering substance
2000 mg/L	Cl^-, Na^+
1000 mg/L	K^+, SO_4^{2-}, NO_3^-
500 mg/L	CO_3^{2-}, Ca^{2+}
200 mg/L	NH_4^+, PO_4^{3-}
100 mg/L	Mg^{2+}, NO_2^-, $S_2O_8^{2-}$
50 mg/L	Fe^{2+}, Fe^{3+}, Ni^{2+}, Zn^{2+} , Cu^{2+} , H_2O_2
25 mg/L	$S_2O_3^{2-}$, SO_3^{2-}
10 mg/L	Cr^{3+}, Cr^{6+}, Cl_2

Summary of method

Cationic surfactants react with bromophenol blue to form complexes, which are extracted in chloroform and evaluated photometrically.

FOR TECHNICAL ASSISTANCE, PRICE INFORMATION AND ORDERING:
In the U.S.A. – **Call toll-free 800-227-4224**
Outside the U.S.A. – **Contact the HACH office or distributor serving you.**
On the Worldwide Web – **www.hach.com**; E-mail – **techhelp@hach.com**

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